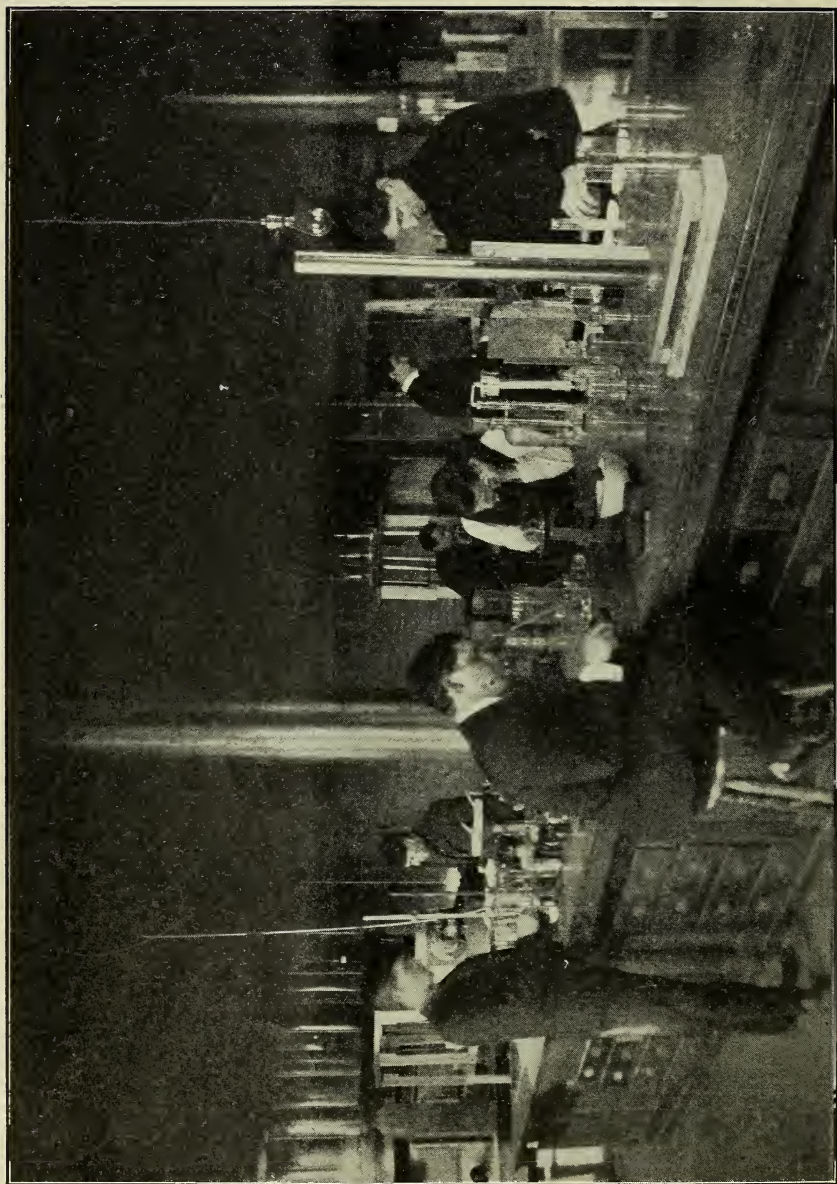


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Advanced Students in the Soils Laboratory, Ohio State University.

THE AGRICULTURAL STUDENT.

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EDITORIAL.

We are in receipt of the first number of "The Cornell Countryman," a new agricultural college publication from Cornell University. If the initial number is a criterion of the future character of the magazine we predict for it a large success. It is to be published monthly and its board of editors comprises both students and alumni. We are pleased with the name, the cover, the make-up, and especially with the general tone of the reading matter. Surely no agricultural college is more able to support a creditable publication than Cornell, and a bright future for the periodical is almost assured.

It is gratifying to note that the agricultural colleges are one by one falling in line in the matter of college publications and it is becoming evident that we, the pioneers in this work, cannot rest on our laurels if we are to keep pace with the several admirable publications that have appeared in the last few years. And while we fully appreciate the time, the attention, the constant care it takes to keep such publications up to standard as the years come and go, we do fully believe in the mission of such



periodicals and wish each and every one most abundant success in their efforts in furthering the cause of agricultural education.

The fact that the grand championship at the international was again won by an agricultural college adds another victory to the list which is going to prove that our colleges are practical. Practical men were formerly inclined to look with disfavor upon the teaching of animal husbandry, saying that it was impractical and foolish. This view is rapidly disappearing and few things do more to aid in bringing about an appreciation of the efficiency of college instruction than this yearly capturing of the grand championship prize by one of these institutions. The showing made by agricultural colleges in the ring this year was very commendable and Nebraska should be congratulated on her success in winning.

The annual students' judging contest at the International this year was not without its usual disagreeable features. As we go to press no decision has yet been rendered and the placing of the Spoor trophy is yet unsettled. Whatever may have been the causes which led up to this trouble regarding judges, it is at least no honor to the management. The fact that the colleges themselves have little or nothing to say as to the manner of conducting these contests, when they are really the only people concerned, is undoubted evidence that matters might be improved. We insist that each college interested should be in some way concerned in the management of such an affair as this, and further, that the best results will not be seen until some such plan is adopted.

Agricultural Training for Farm Youth.

The school system that suits the American people is the unified system, embracing the graded schools, high schools, and universities. Within the past few years there has been a decided falling off in the number of private and religious schools due to this new system. Also a few years ago people were educated to be quality, but that was before the division of labor was so marked as it is now. This is the great age of specialization, and the people are coming more and more to see the need of educating in some special line of work. Formerly, when a man wanted to specialize he did not do so until he had taken a course in some classical school. When we come to consider that only about 1 per cent. of the people who want to specialize can take a college course first, then we can see the necessity of having schools, especially for these 99 per cent.

If there is any one class that needs a special education it is the farmer, and a great many of our educators are coming to realize this fact and are taking measures to help him. To develop the present courses in agriculture in our state universities and colleges it has taken forty years of experimenting, but now that they have been firmly established, we must reach out farther and come nearer to the people. This can be done only by using the means nearest to them, and that is the high schools and rural district schools.

Agricultural high schools have been established in each congressional district in Alabama and also in several other states the experiment has been tried and in every case it has been found to be a success. They serve as high schools for the farmer as the high school serves the city people. As

the city primary graded schools, city high schools and college courses have been articulated into a unified system, so the consolidated rural school, agricultural high school and college of agriculture can be articulated into a parallel system. The one with its industrial side strengthened will serve the city life, the other will serve the country life, and this without any serious loss of time to the student who desires to transfer from one to the other. The whole system will be useful to all classes.

The city high school tends to educate from the farm, while the agricultural high school has been found to educate toward the farm and into better farming. By having these agricultural high schools it will promote a desire for teachers to prepare themselves for teaching in the rural schools, and with the institution of agriculture in the rural schools this will be one of the crying needs—the need of specially prepared teachers. Several states have taken the matter up and have started courses for the preparation of teachers in Nature studies. Some states already require their teachers to pass an examination in elementary agriculture. Again, several states have already tried consolidating the rural district schools into a central township school, where the pupils are transported each morning by hacks, which have an outlined route. The children in this way are given the benefit of a graded system, the same as the city pupils. In the great majority of cases the education received at this school is all that a great many of the children will get. Now, if we have teachers for these schools who have had a previous training in agriculture, they can gradually instill into the developing minds of these children, the love for the farm which they should have. It is right that they should be taught to raise their standard of living, but they should not learn to

ignore the noble vocation for which they are best fitted. Can they not be taught to feel that “farmer” is just as dignified a title as lawyer or doctor? W.

The International.

The fourth International Live Stock Exposition is over and nearly three thousand full-blooded cattle, horses, sheep and swine have been returned again to the quiet and seclusion of home life. It passes into history unparalleled in its display of the results of the attempts of breeders and feeders to produce perfection in animal form and fitness.

The International is the culmination of the show season and presents the best that the breeders and importers can show. It has assumed such vast proportions and its exhibits are of such gratifying character that it takes rank among the greatest exhibitions of its kind which the world has been able to display.

The desire to study the best in animal form brings to the International the earnest and painstaking stockmen from all parts of the country and they carry back to their various sections inspiration and information, the extent of which if known would doubtless be astounding.

The recent exposition surpassed its predecessors in the quality of its exhibits if not in the number. Fewer animals of ordinary merit were shown than ever before and the quality and strength of the younger animals augurs well for the future.

The interest in the International taken by agricultural colleges is evidently increasing. Delegations of students from colleges from North Dakota to Texas and from Ohio to Colorado were in attendance and numbering in some in-

stances as high as one hundred and twenty-five. Squads of students trooping through the corridors with their colors flying and giving their college yells was one of the most evident features of the exposition.

In the show ring this was pre-eminently an agricultural college year. The Shorthorn, the Angus and the grade championships went to colleges, as did also the grand championship and the reserve. Also four of the beef carcasses prizes fell to college entries.

The grand champion steer was Challenger, a white-faced blue-roan, shown by the University of Nebraska.

An interesting feature of the exposition was the evening entertainments at which parades of cattle and horses formed the principal part of the program with exhibitions of ponies in harness and under saddle, and displays of heavy horses in harness as special features. Each evening closed with a parade of horses of all types and classes in action and skillfully dressed for parade in tape, ribbon, straw and paper flowers.

Lack of suitable accommodations doubtless kept many from attending the exposition; but better car facilities and a new and adequate coliseum for the show ring, which are promised, bespeak for the fifth International even greater success than that of the fourth.

J. C. W.

The Ohio Forestry Association.

Those who are interested in forestry, and especially forestry in Ohio, will be pleased to learn of the organization of "The Ohio Forestry Association," which was effected at Delaware during the meeting of the State Horticultural Society. Ohio forestry matters have been somewhat neglected of late, owing to the

practically defunct condition of the State Forestry Commission but with the rapidly increasing public appreciation of the need of forestry legislation, this attempt to further the forest interests of the state is especially commendable. Something should be done in a legislative way in Ohio, as in many other states. The destruction of our forests is alarming and scarcity of timber is rapidly becoming felt. A rational system of forestry is imperative if the best interests of the state are guarded. It is sincerely hoped that this association may be able to accomplish much toward bringing about a thorough recognition of the need of action in this matter, and in crystallizing public sentiment.

The association is organized with fifty charter members. W. I. Chamberlain was elected president and W. R. Lazenby secretary. The first meeting will be held in Columbus at the time of the yearly agricultural meetings in January.

The Country Boy's Education.

Many a country lad is honestly debating with himself during these long winter evenings, whether or not it will be best for him to leave his old home and spend a series of years in a better preparation for his life work. There are obstacles, there is uncertainty.

As he comes more and more in touch with the recent advances along scientific lines as gleaned from the progressive agricultural papers, there comes to him visions of better things in store for the fellow who is not afraid to dare and do. This brings an inspiration and enthusiasm that stirs the very depths of the youthful soul, and if a word of encouragement is given at this time, it

may be the tide in the affairs of his life that will lead him on to fortune, whatever mysterious realm that may be expected to include.

Should our friend come in touch with a person at all acquainted with the forms of special education for the farmer, he will have his interest stimulated and guided in the proper direction; but sad it is to say, in many of our rural districts there are those who freely give of their advice and are veritable cold-water pourers for dampening the spirits of the young men, who, looking only a short ways into the future, realize the need of better mental equipment for coping with the twentieth century problems in cornfield, meadow and feed lot. These counselors are mostly of the old school, we might say, to some degree, who never having had the advantages of such opportunities, have formed their modes and habits of thinking in such a manner as to practically exclude all forms of training which they, never having had, can see no need of, and thus consider it as ambiguous to all. But time and tide wait for no man and if our friends do not see the error of their ways, and reform e'er it is too late they will be left in the race.

In this age of specialization, centralization, monopolization and hustling too much emphasis cannot be laid upon deep and well built foundations, if the structure we are rearing day by day is to stem the tide throughout eternity. Taking education to be the training of a man's mind in such a manner as will best aid him in adapting himself to this world's life, and considering a special education as applying to one's specific environment, we may establish our point of contact on these grounds. As the early maturing harvest apple vanishes long before the frosts appear, so the man who specializes too soon will

early find himself outstepped in the contest and on the path toward premature decay because a person who is not on the advance seldom fails to recede. Thus the best special education has nowadays come to mean first a very liberal education along many lines of study which builds up useful systems of associations in the mind as a reserve force and foundation for future tempests.

Let us diverge for a moment into some other walks of life. 'Tis true that some men who have reached the pinnacles in other vocations, look with disdain upon some of the more unprogressive farmers; but the leading agricultural men, educational and practical, can easily find unfair comparisons among the inferior followers of other pursuits.

Stranger than fiction it seems, though it is the truth, the man who advises young men to go into agricultural pursuits at once rather than take the time and money for the special preparation in college, when he gets sick, wants the best doctors in the town to nurse him, instead of the quack, who, like himself, does not believe in special training. Again, this same fellow, when he has legal troubles, is willing to pay the best lawyer to aid him, never stopping to think of the premium that he is placing upon the very thing that he eternally condemns. Constant in his inconsistency this same individual is loudest in his praises of the minister who is a college graduate, followed by special training along his chosen line. And so it goes in every vocation. It is the man with the best preparation in the way of training and education, who is gaining the coveted goals, from the financial standpoint.

This suggests other things that may be implied by the "need." We should indeed feel disappointed if the only ad-

vantage resulting from a special training, materialized only in a financial way, important as that may be, and being, probabaly, no small factor in the eyes of the farmer lad in bringing him to college, as he hears of the monstrous salaries obtained by graduates, but which seem to diminish as realization approaches. A man cannot lead others to higher realms of knowledge until he has scaled the heights himself, and to the man whose heart is in the right place and in no way atrophied, there can be no greater satisfaction or enjoyment than in building up the social standards of his community along educational and spiritual lines.

Life is largely what we make it and surely every American citizen, in the light and liberty of this glorious twentieth century, should be able to stop making a living long enough to make a character that will endure. That man who best understands nature and her marvels, gets the closest to her bosom and her secrets, and his enjoyments of her beauties exceeds the pleasures of the indifferent observer in so far as his knowledge exceeds that of the latter.

The man who would enjoy most must know most. The man who would accomplish much must prepare himself for his work, and in this time of such intense competition it is a self-evident fact that the man who fails to appreciate the importance of a special education along any line of agriculture, must necessarily labor under a serious handicap.

C. C. HATFIELD.

Meeting of Ohio Dairymen's Association.

The Ohio State Dairymen's Association will hold its annual meeting in Townshend Hall, Ohio State University, Columbus, O., January 27, 28, 29, 1904.

Everything looks toward the banner meeting of the association. The large room that is used as the agricultural museum was about filled with dairy supplies and exhibits last year. This year the entire space of this room has been taken up by applicants for space and the adjoining room has been set aside for the overflow exhibit.

The donation from the supply men for the pro-rata fund has already exceeded that of last year. The following have given to this purpose:

Colonial Salt Co., Akron, O..	\$25 00
The J. B. Ford Co., Wyandotte, Mich	15 00
D. H. Durrell & Co., Little Falls, N. Y.....	20 00
Heller-Herz Co., New York City	10 00
Diamond Crystal Salt Co., St. Clair Mich	10 00
De Laval Separator Co., New York City	10 00
P. M. Sharples, Westchester, Pa.....	15 00
Worcester Salt Co., New York City	10 00
Great Southern Hotel, Columbus, O.....	10 00
Total	\$125 00

Last year the association guaranteed the pro rata would be fifty dollars. The Secretary expects it to exceed two hundred dollars this year. If a good pro-rata fund will bring a large exhibit, a large number of buttermakers, cheesemakers, creamery and cheese factory operators, we ought to have a crowd at the meeting this year.

With the same number of exhibitors we have had in the past the winners will probably get a larger slice of the good stuff than the winners in some of the other states which have a very much larger pro rata.

The program is to be supported by the best men the country affords and

are, on the whole, the men that are known to take conventions right with them. The program has not all been arranged yet, but it will soon be ready for distribution.

D. A. CROWNER, Sec'y-Treas.

The American Federation of Students of Agriculture.

The American Federation of Students of Agriculture held its annual meeting in the Chicago Live Stock Record Building on December 2, 1903. The program for the evening consisted of the reading of papers on various topics more or less related to agriculture.

Students from twelve colleges comprise the association and a college is chosen each year from which to select all the officers and to have charge of the program for the ensuing year. That honor for the coming year fell to North Dakota.

This organization has a most worthy object and every effort should be made to foster it and to further its ends. The assembling of agricultural students from the various colleges in a meeting of this nature holds possibilities for much good to all concerned. The meetings thus far have not been well attended and it would seem advisable for each college to impress upon its students the desirability of keeping in touch with this movement. The International makes this privilege possible and the advantages to be derived from mingling together the students from various colleges in an informal meeting where they can get acquainted should not be overlooked.

It is hoped that North Dakota will feel the importance of the position she holds in arranging for next year's meeting and that she shall spare no efforts to bring the association into a flourishing condition.

O. S. U. at the International.

The International excited more than ordinary interest at the College of Agriculture this fall. A crowd of students numbering about thirty, accompanied by Professor Plumb, spent several days at the big show, and they report a most enjoyable time. In the students' judging contest the following students were entered: J. C. White, D. H. Weist, A. S. Neale, W. H. Palmer and W. T. Florence. Up to date the judges' report has not been submitted owing to a misunderstanding of the rules governing the contest, but it has been announced in Chicago papers that according to the statement of one of the judges the boys stood high in their work. This is especially gratifying when it is considered that they were competing with western colleges where so very much time is given to animal husbandry and such great care taken in preparing students for the contests.

The University was also represented in the sheep ring, as mentioned elsewhere in this issue, and it is hoped that another year will see her represented in the cattle ring. These things serve to show the growing sentiment regarding work in animal husbandry in the College of Agriculture and indicate the possible development along this line.

Carbon Bisulphide as an Insecticide

During the last few years carbon bisulphide has been much used as an agent for destroying insects and vermin infesting grain, dwellings, mills, elevators, etc. It has many qualities which make it highly desirable for such purposes. It is not poisonous to the higher animals when taken in small quantities, hence, an inexperienced person can use

it with comparative safety. This is true of very few of the best insecticides. They are either extremely poisonous or so difficult to handle that they cannot be used by any but an expert.

Carbon bisulphide under atmospheric pressure is a gas, but it may easily be kept in the liquid state by keeping it in air-tight vessels. It may even be preserved by placing it in an open vessel and covering it with water. The pressure given by the weight of the water is sufficient to prevent it from volatilizing. The specific gravity of carbon bisulphide at 0° C. is 1.20. When in the gaseous state it has a specific gravity of 2.63 as compared with air. This fact makes it very useful for places like granaries where the top is open while the bottom part of the granary is tight.

One of the greatest objections to the use of many of the more common insecticides lies in the fact that they cannot be used where there may be either prepared or raw food materials. For example, hydrocyanic acid cannot be used where there are food materials as it is a gas only at relatively high temperatures and hence will condense on cold subjects such as potatoes, apples, etc. Again, it is very soluble in water, and as all prepared food stuffs contain a large per cent. of water it will readily be seen that these food stuffs would most surely be poisoned if the building containing them was to be fumigated with hydrocyanic acid. On the other hand, carbon bisulphide is free from both the above named faults. It will neither condense on cold objects, nor will it in the least injure food stuffs. It may even be used on prepared foods, and provided that it is given time to evaporate these foods may be used without the slightest danger.

Carbon bisulphide is not poisonous to man unless breathed in comparatively

large quantities. It will, when taken in excessive quantities, produce dizziness, congestion, coma and finally death. It affects the heart action especially. Persons having weak hearts will do well to keep away from carbon bisulphide.

The variety of uses to which carbon bisulphide may be put is very large. It may be used around the dwelling to destroy cockroaches, mice, rats, flies, etc. It may be used to rid grain of weevil or similar pests. It may be used to rid mills and elevators of the flour moth or in fact of any insect or animal. It is quite often used to destroy ant-hills. It has been used with great success to kill gophers or wood-chucks in their burrows. It is quite often used in conservatories to rid the plants of lice. It must be said, however, that as a general rule hydrocyanic acid will be found more satisfactory for this last purpose.

Carbon bisulphide may be obtained on the market in cases of various sizes. The one pound can will be found to be a very satisfactory size for most people. Persons intending to fumigate large buildings will, of course, find it more economical to buy the bisulphide in large quantities.

As to the amount of carbon bisulphide to use for buildings, proceed as follows: Calculate the cubical contents of the building, then provide one pound of bisulphide for each one thousand cubic feet of space. Also provide shallow dishes or crocks, one for each one thousand cubic feet of space. Distribute these vessels over the building as evenly as possible. Make all windows and doors as near air-tight as possible. Commence on the ground floor, and place one pound of the bisulphide in each dish. Work rapidly as possible to be consistent with thorough work. When the bisulphide is distributed over the first floor, proceed immediately to

the second floor, closing the door between the two floors completely. When the top floor is reached, leave the building by means of a ladder previously provided. Do not go near the building until several hours have passed. It is well to begin the fumigation in the evening and by morning all the gas will have disappeared unless the building is unusually tight. In some cases it will be well to place a watchman to keep all persons away from the premises. One thing must always be borne in mind, the gas is extremely inflammable and hence every precaution must be taken to have no fire around. Incandescent lights are not safe as a spark is liable to be formed in switching the lights on or off.

In fumigating such materials as stored grain or ground feed it is generally thought best to proceed as follows: Allow one pound of the bisulphide for each one hundred bushels of grain, or in cubic feet, one pound of bisulphide for each one hundred and twenty-five cubic feet of space actually occupied by grain. Place the bisulphide in shallow vessels placed on the surface of the grain and leave the immediate vicinity at once. If ordinary precautions are taken there need not be the slightest danger in using carbon bisulphide.

J. H. BEATTIE.

Meeting of the Agricultural Student Union.

Arrangements for the annual meeting of the Agricultural Students' Union and for the Students' Reunion have been completed. As announced in our last issue an all-day meeting will be held, consisting of three sessions, one of which shall be devoted to corn and one to an informal luncheon and reunion. It is hoped that one or two persons from out of the state will be present to give addresses and a most enjoyable

time is anticipated. The Agricultural Student Union has made a wonderful development in the last two years, and this meeting will be the most important in the Union's history. Radical changes in management are necessary, in which every ex-student of the College of Agriculture will be interested, and it is hoped that as many as possibly can will put themselves in direct touch with the College of Agriculture and the agricultural development of the state by attendance at this meeting.

The reunion feature is one that appeals to all, and this alone should give ample reason for being present. A most enjoyable time is promised.

Dr. Thompson Honored.

At the recent meeting of the Association of Agricultural Colleges and Experiment Stations, held at Washington, Dr. Thompson was elected president. This is an honor of national importance and it is the first time it has fallen to an Ohio representative.

School Gardens.

A few years ago there was a movement started by Prof. Kerns, of Winnebago County, Illinois, to establish school gardens. The Wyoming School, of Dayton, Ohio was one of the first that took up the movement, and trees and shrubbery of various kinds were planted, while a hot house for the less hardy plants was provided. Since then many schools of New York, Chicago and Milwaukee have followed the example.

The advantage of the school gardens is two-fold. It not only makes the school more attractive to the children, but is also very educational. The children develop a love for nature by the raising and caring of the plants which

not only teaches them to be more observing, but also to appreciate the beauty of nature. The teacher gives the pupils object lessons in the sprouting of the seed, the formation and blooming of the flower and the preparation and care of the soil in which they are raised. The school garden gives the children less time for brutal sport and awakens in them a love for nature and God. They will develop an esthetic eye for nature and as they grow up will do all possible in preserving the natural scenery of the country instead of defacing it.

Animal Husbandry Notes.

At the International Live Stock Exposition the Ohio State University showed two pure-bred Shropshire yearling wethers, and two Cotswold yearling wethers. In a very strong class of twelve Shropshires, the University secured sixth place with a "Commended" ribbon. This was the same sheep that was first in class as a lamb at the same show in 1902. In the Cotswold ring the University won second and third places, there being but four sheep in the class. These two last wethers won \$25 in prize money. The four wethers went into the slaughter test, and afterwards Swift & Co. paid \$41 for the carcasses.

These wethers were very good specimens; and were fed by students exclusively, especially Messrs. Hatfield and White, and they had to be shown against some of the most capable shepherds and fitters in Canada, while the students were inexperienced in this work.

An effort will be made to secure and feed a number of steers for the next International, such as may bear promise of making a creditable showing for the University another year. It seems desirable that Ohio State should be represented in the gathering together of high

class college stock at the International. Such material simply exhibits to the multitude attending the show something of the educational material available to the live stock student. In every instance where a college has shown superior, prize-winning stock, the premiums won and money from sales have more than paid in returns to the institution. Minnesota University won, through an Angus steer shown, some \$800. Iowa also secured a very considerable sum from her exhibit. The money side is not presented as an argument in favor of showing, but rather as demonstrating that high class animals may be shown at no great final expense to the University.

During the exposition the writer purchased for the University, of George Allen of Allerton, Ill., four pure-bred Shropshire wether lambs and one cross-bred Shropshire Southdown lamb. We also secured from Park & Son of Canada four pure-bred Cotswold wether lambs. These are a more uniform and better lot of sheep as a whole than those purchased in 1902 at the International, though none of these lambs had been shown.

The University Farm has recently sold to the Virginia Agricultural Experiment Station the young Jersey bull, "Pedro's O. S. U. King."

Visitors to the University Farm are not generally aware of the fact, but at the present time we have in the barn one of the most famous Shorthorn bulls living, viz: Brave Archer. This bull is owned by Mr. Ed. S. Kelly of Yellow Springs, Ohio, and has been kindly loaned the University by him for study. He was bred in Scotland and is a son of the celebrated Scottish Archer, and

Mr. Kelly paid \$6,000 for him. He has been shown at the leading fairs of England, Scotland and America, and was a great prize winner in his day. He is a magnificent beast, with a temperament of the most docile sort, and is a great representative of the breed.

C. S. PLUMB.

Dairy Notes.

New machinery for the winter term in dairying is now being installed. A Ried pasteurizer and tubular milk cooler, capacity 2000 pounds per hour, has arrived and is being set up. A number of new devices for tempering milk, etc., will be set up so that after the milk is weighed into the receiving vat it will flow continuously through milk heater, separators, pasteurizers and coolers into the skim milk cans without intermediate handling. New separators of the following makes will be on the floor of the creamery laboratory: De Laval, United States, National, Empire, Sharples Tubular, and D. H. Burrell's New Simplex.

The New Hampshire Dairymen met in annual convention, December 2-4, in the city of Keene, Cheshire County. Among the speakers were three members of the New Hampshire Agricultural College at Durham: President W. D. Gibbs, Professor Taylor and Professor E. L. Shaw, all well-known at the Ohio State University. Professor Decker of O. S. U. also appeared on the program. He reports an exceptionally fine exhibit of butter, the average of the scores being a fraction above 95.

At the Wisconsin Agricultural College the short winter courses in dairying and agriculture have been emphasized. At the present time 141 dairy students are there at work and a class of over

300 short-course students in agriculture is just beginning work. In the past there have been but few students taking the four years' course, but the faculty has decided to push that phase of the work and over forty long-course students have started work this fall.

Planting a Wild Garden.

In planting and managing a mixed border of native wild plants, or a wild garden or botanic garden, whichever you choose to call it, there is a great opportunity to acquire knowledge of the habits of plants. Some of these lessons may be a surprise. It has been noticed that summer freshets have more than once killed spikenard, adder's tongue, burdock, dandelion, catnip, motherwort, mallow, and many others not usually found in abundance on river bottoms, when they are planted there. Why these should be killed and not the larger proportion of the others we cannot tell.

Some of the asters, goldenrods, lilies, iris, water weed, arrow-head, cat-tail flag, yellow pond lilies, and others, spread rapidly in every direction, and if not disturbed will soon monopolize all of the unoccupied land. A good many more are modest and spread little, but root deeply as though they had come to stay. Of these, are water-dock, several wild sunflowers, pokeweed, and horse-radish. Many are delicate and make slow progress, perhaps because we do not understand their wants. Such have been found the beautiful hepaticas, gold-thread, trailing arbutus, winter-green, laurel, rhododendron, and most others which have broad evergreen leaves. The hot sun in summer kills the leaves.

In a garden we have a chance to study the effect of large masses of one species of wild plant. The shape and

color of the leaves and the positions assumed by each are very interesting studies. For example, the dark lanceolate leaves of several sorts of wild sunflowers, each bunch five to eight feet in diameter, hang down, overlapping one another somewhat like the shingles of a roof. For the back part of a garden in front of a tall fence, a building, or some trees or shrubbery, these plants are appropriate and much more attractive than many suppose.

The large coarse plants of *Silphium perfoliatum*, cup-plant, are almost subtropical in effect.

Wild lettuce has smooth pinnatifid leaves which hang down from the erect stem, which is often ten feet high. Before flowering, this plant is a real beauty.

Wild senna has long pinnate leaves and racemes of yellow flowers. A mass five feet high and six feet in diameter cannot fail to awaken the admiration of every true florist. When placed together, it is striking to study, by day or night, the change of position of leaves of most leguminous plants, such as the last mentioned, including peas, locust, clovers and the like.

Several of the wild asters and golden-rods, when placed in damp, rich soil, in large bunches which are a trifle isolated, will astonish almost anyone who has never seen them thus situated. The graceful, even outline, the leaves and the flowers are a study.

Let us here call attention to the idea of growing some of our grasses in large unmixed masses. The *andropogons*, wild *soghum*, *panicum virgatum*, several species of *elymus* (wild rye), bottle-brush grass, in fact almost every grass we have, and there are sixty or more in almost every neighborhood, are fine ornamental plants.

The horticulturist will be well repaid by a study of the sedges, of which he will find a number that are valuable for use in masses, each sort by itself in bogs or low places.

The fruits of our different species of trillium are quite dissimilar and afford good points for distinguishing them.

In a botanic garden or wild garden, throughout the season, from the first willows to the witch-hazel and gentians, the apiarist can see what his favorite insects visit for nectar and pollen. The figworts, too, in large numbers are hardly less valuable, and to them belong the mulleins, toad-flax, snap dragon, snakehead, pentstemon, *mimulus* and a host of others. The immense sunflower family contains hundreds of plants valuable for bees.

Here the young and enthusiastic entomologists sweep in our insect friends as well as our insect foes. They learn to look for certain insects about the plants of a certain species, genus or family.

Here the landscape artist can study plants with reference to producing certain effects. Some are subtropical, some suitable for bog or pond, some for sunshine all the day long, others only for shade. Some are best in groups of one kind, others are best massed with one or more sorts; some are eccentric, some noble, some clean, some straggling. Plants with tall, slender or naked stems may be properly planted in or near low bushy ones which will support or cover their nakedness. With some the chief glory lies in their flowers; with others in the foliage. Some are out early in spring and go to rest during the heat of summer, while others barely get into flower when the frosts of September appear. Some will be well cared for if all the allied hardy

species are placed in a ward or group, while others, like the violets, shoot their seeds for a yard or more in every direction and soon become helplessly mixed.

Some plants are suitable for dry, sunny slopes, others retire to the shade. Study the soil and location of wild plants to learn how to treat them in a wild garden. The following are excellent to hang over the crest of banks in exposed places: Wintergreen, bear-berry, trailing arbutus, dwarf blueberries, dwarf June-berry, violets, harebell, wild asters, the sweet golden-rod, anemones, the bushy andropogons and panicums, and the dwarf sedges.

Cheap and unique ornaments are the sprouts of low stumps cut back each spring to near the old roots. For this purpose use any oak, the June-berry, witch-hazel, the maples, ashes, basswood, poplars, alders, birches or chestnuts.

If once well selected and well started in a wild garden, plants may remain very attractive for a great many years without much attention, save now and then a little thinning of the most vigorous to keep them from overrunning their more retiring neighbors. Considering the outlay, if the taste leads that way, one will get better returns for labor spent in a wild garden than he will from one neatly shorn near the house.

Edward D. Coberly.

The "North American Farmer," published at 248 N. High St., Columbus, O., is a live, practical, up-to-date monthly, devoted to the interests of the farmer and his family. Contributions from Prof. C. S. Plumb, Prof. Alfred Vivian, Prof. J. W. Decker, John M. Jamison, Lowell Roudebush, H. P. Miller and other well-known writers are frequent. A series of articles on

"The Principles of Manuring," by Professor Vivian, begun in the December number, will run through 1904. "The Breeds of Sheep" a complete treatise, will begin in the January number. Subscription price 50 cents per year. One thousand dollars in cash prizes will be given to agents in 1904. Sample copies sent free.

University News.

Miss Cornelia Souther, Associate Professor of Domestic Art, has resigned to become general secretary of the Young Women's Christian Association, Indianapolis, Ind.

* * *

The final examinations for the term covered a period of six days, ending December 23.

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C. N. Mooney, '00, visited the University recently. Mr. Mooney is still with the Bureau of Soils, U. S. Department of Agriculture, and expects to spend the winter in Florida. He and J. C. Britton, O. S. U., '99, who were last summer sent to the Bahama Islands for soil investigations, report a very pleasant and interesting trip.

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Professors Lazenby Price and Davis attended the annual meeting of the Ohio Horticultural Society at Delaware. Several students accompanied them.

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Miss Stoner, of the Department of Domestic Science, is quite ill.

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The final football game of O. S. U. with Indiana, held Thanksgiving Day, resulted in a victory for the "Hoosiers" by a score of 17 to 16. The Ohio team made all of her points in the last half, but played well throughout the entire game. As usual, the Thanksgiving game was well attended.

John D. Thrower, a senior in the College of Veterinary Medicine, was elected captain of the O. S. U. football team for the season of 1904. "Texas," in the last three years on the 'Varsity team, has steadily pushed his way to the front as a player of unusual aggressiveness. With him lies the responsibility of heading a championship football team for next season, but he will prove worthy of the trust imposed in him by 1800 loyal State University students. The coach has not been chosen for the season of 1904, but it has been definitely decided that Perry Hale will not return.

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The O. S. U. Glee and Mandolin Clubs gave their annual concert at the University Chapel Friday evening, December 11. The concert was well attended by the students and the faculty of the University. This is the fifteenth concert that the clubs have held and was pronounced the best. The girls' glee club of O. S. U., an organization of two months' standing, appeared for the first time in public and carried off the honors of the evening. Miss Turner, of Springfield, who possesses a well-modulated soprano voice, assisted in the program. The club will make a trip the latter part of the holidays, singing at several places in the northern part of the state.

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O. S. U. will meet Oberlin in a debate in the early spring. The question which will be debated will be: "Resolved, That municipal ownership of public utilities is desirable." O. S. U. will support the affirmative side in the debate with Oberlin, but later in the season she will take the negative of the same question in a debate with the University of West Virginia. The four men who will represent her in the debate will be chosen by a public preliminary to be

held in the University Chapel January 11.

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The monthly twilight concerts, which were so popular last year, are being repeated this season. The talent is mostly local, but Columbus has a wealth of musicians of note. The concerts are under the control of the Young Women's Christian Association.

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Basketball now holds sway in athletics. All of last year's team is in school and a winning team is expected. A good schedule of games has been arranged.

Alumni Notes.

Mr. F. C. Ball, who was a student here in 1895-96, is located at Mt. Vernon, O., and is engaged in dairy farming.

Mr. H. A. Clark, '02, is with the U. S. Department of Agriculture, Bureau of Soils. He is engaged in tobacco investigations and is located at Germantown, this state.

John H. Dunlap is engaged in stock and grain farming at Williamsport, O. He also has a general store, carrying a line of farm implements.

Mr. Austin E. Dodds is engaged in farming at Tranquility, O.

Mr. F. I. Downs is engaged in farming at Waterville, O.

C. D. Closson is with the Winthrop Drug and Chemical Works, 41-45 State street, Chicago, Ill.

D. H. Duncan is engaged in growing and evaporating sweet corn at Ludlow, O. During winter he is employed as clerk for a firm of general railway contractors.

Charles H. Canfield is at present employed as meat inspector, U. S. Department of Agriculture, Bureau of Animal Industry, and is located at Indianapolis, Ind.

O. D. Clark is engaged in general farming and stock raising at Wheat O.

Mr. E. T. Clapp is farming at Chatham, O. The product of his sugar grove is excelled by none.

Thomas W. Brinker is located at Spencer, O. and is making a specialty of sheep raising.

Albert E. Day, '01, is farming at Mt. Carmel, O. He is making a specialty of market gardening.

Philip Baer, '97, is still located at Canal Dover, where he engages in extensive farming operations.

The following regarding O. S. U. men with the Bureau of Soils is of interest:

E. O. Fippin, '00, will spend the winter in Decatur county, Georgia, making a soil survey of that region.

La Motte Ruhlen, '02, has been assigned to the region near New Orleans, La.

H. L. Belden will be located near Austin, Tex.

William H. Gilmore, '99, recently issued his wedding announcement.

W. G. Byers, ex-'03, was a recent visitor on the campus.

General Agricultural News.

G. N. Knapp has been appointed assistant professor of agricultural engineering in the Wisconsin College of Agriculture. This is in accordance with the provision made for such a department by the last legislature.

Iowa Agricultural College is just completing a new stock and grain-judging pavilion. The building is octagonal in form, 65 feet in diameter and is two stories in height, the lower floor being used for stock judging, the upper floor for the grain work.

The legislature of Michigan has provided for the establishment of ten county normal schools for the purpose of training rural teachers.

Professor A. D. Hall, director of the Rothamstead Experiment Station, is delivering a course of lectures in the University of London on the "Relation of the Composition of the Plant to the Soil in which it Grows."

Professor Thomas F. Hunt is planning extensive experiments with timothy. Ten thousand timothy plants have been grown in pots and the best plants will be selected from which to breed. Twelve acres of land have been set aside for this work. The Cornell University farm has some steep hillsides and a study will be made of methods for covering these steep places with grass.

It is reported that Cornell students are showing the same enthusiasm in their work with Professor Hunt that was shown in his classes at O. S. U. The post-graduate students in agriculture meet at Professor Hunt's house with the faculty once a month for discussion of agricultural subjects. At the

last meeting they discussed acidity of the soil.

The two-weeks' course which opens at the Agricultural College of Iowa, January 4, will pay particular attention to the judging of corn. All the farmers of Iowa are invited to come to Ames while the short course in judging lasts, and are requested to bring samples of their corn. Object lessons will be given and better methods of improving corn demonstrated in order that the State of Iowa will be able to carry off the prize at the St. Louis Fair this summer. A premium of \$3000 is offered for the best corn exhibited in grower's name. Advanced courses will be given during this two weeks for men who have had any work of this kind previously. A tuition of \$2 will be charged to each man taking this course.

Professor Kerns, superintendent of the public schools of Winnebago County, Illinois, has organized a club of the farmer boys of his county. Beginning with the boys of each township he has at last joined together over 400 boys from the entire county. The boys hold their meetings once a month during the entire winter and here topics of the farm are discussed and prepared papers read. They have elected their own president and secretary and carry on meetings by themselves. Corn and its diseases is the subject which they are considering now. It is hoped that the boys of other counties will realize the benefit that can be derived from a club of this kind and will follow the example set by Winnebago County.

The U. S. Department of Agriculture is again making trial shipments of apples to Europe. The shipments are much larger than last year, and are be-

ing shipped from various sections in order to test the comparative value of different types of packages and packing in several European markets. The shipments will be continued through the winter. This is in line with the extensive apple storage investigations which the department is making.

Secretary Wilson asks Congress to make a special appropriation of \$500,000 to be used in an effort to check the ravages of the cotton boll weevil. The damage in Texas alone is estimated at \$15,000,000.

The agricultural building at the St. Louis Exposition covers 23 acres and is the largest structure ever erected for a single department.

The estimates of appropriations for the Department of Agriculture for the next fiscal year have been completed and aggregate \$6,009,880, exclusive of \$720,000 for experiment stations.

The estimates include: For weather bureau, \$1,428,510; bureau of animal industry, \$1,350,000; bureau of forestry, \$412,860; bureau of chemistry, \$548,700, including \$50,000 for continuing important work under the pure food law.

The special course in agriculture, which has been given at the Scientific School of Yale University for twenty-five years, has been discontinued on account of the retirement of Professor Brewer.

Professor Carlyle of the Colorado Station has commenced a feeding test, the result of which will be watched with interest by cattle feeders.

Three hundred steers are in the test, to be divided into three lots. One lot will be fed alfalfa and beet pulp; another will be fed pulp, alfalfa and Colorado-raised grain, wheat, barley and possibly cotton-seed meal; the other will be fed beet pulp and imported corn.

Attendance at agricultural colleges for the year 1902 aggregate 46,699 students, of whom 6299 were in the agricultural courses. Considerable advancement has been reported in the way of secondary and elementary schools of agriculture. The agricultural high schools of Wisconsin have been so successful that their number will be increased. Such schools are about to be opened in California and Massachusetts.

Book Reviews.

BARN PLANS AND OUTBUILDINGS. New, revised, and greatly enlarged edition, modernized and brought down to date by Edwin C. Powell. 375 illustrations, 5x7 inches, 404 pages, cloth. Orange Judd Company, New York.

With the increase of wealth and enlarged ideas among the farmers of the country, there is a gradual but very decided improvement in farm architecture. The proper and economical erection of barns and outbuildings requires far more forethought and planning than was ordinarily given to their construction. But with modern ideas, proper appreciation of sanitary conditions, and the use of labor-saving implements, a barn that twenty-five years ago was considered perfect would not meet present requirements. To aid those intending new barns, or to remodel old farm buildings, the editor, taking the first edition of this work as a basis, has rewritten the greater part of it, and added so much new and up-to-date matter in text as well

as in illustrations as to make it practically a new book.

After an introductory chapter on the general rules to be observed in barn building, special chapters give detailed information and illustrations on general farm barns, cattle shelters, sheep barns and sheds, piggeries, poultry houses, carriage houses and horse barns, corn houses and cribs, ice houses and cool chambers, dairy houses, creameries and cheese factories, spring houses, granaries, smoke houses, dog kennels, bird houses, silos, root cellars and root houses, cold storage houses, farmer's green houses, house greenhouses, etc., etc. All the descriptions and directions contained in this volume are given in so plain and clear a manner as to be readily understood by any one. Every professional builder, and every person, be he farmer or otherwise, who intends to erect a farm building of any kind, can, in this book, secure a wealth of designs and plans for a very small sum. Sold by Orange Judd Company. Price, post-paid, \$1.00.

THE CHEMISTRY OF PLANT AND ANIMAL LIFE. By Harry Snyder Professor of Agricultural Chemistry, University of Minnesota. The Macmillan Company, New York. 406 pages. Price, \$1.25.

There has been an increasing demand for a book which would outline in simple and concise form the principles of chemistry as related to plant and animal life. This need the book is intended to fill. The publication is especially adapted to the use of students both as a text and reference book and in this it fills a peculiar office. The chemistry of nutrition, of plant growth, of the animal body, the composition of various agricultural products, all are treated with their various sub-divisions and the attempt throughout is to so classify and

arrange as to make it most readily understood. It is a book for the student and fills a need in our agricultural literature relating to chemistry.

A FARM ACCOUNT BOOK.—We wish to call the attention of our readers to Foote's Farm Record and Account Book, advertised on another page in connection with THE STUDENT. Here is what the Breeder's Gazette says of this book:

"No stockman or farmer who at the end of each year would know exactly the amount of money he made and expended can do without an account book of some description. On modern farms conducted on business principles book-keeping is absolutely necessary. Guesswork cannot be relied on in any business enterprise. Neither are the common slipshod methods, without system or order, of keeping records and accounts satisfactory or reliable. Every man who owns and conducts a farm, regardless of the crops he grows or the live stock he breeds should have a blank book suitably arranged in which to keep a systematic account of his business transactions—his receipts, expenditures, crops, sales and many other matters pertaining to the successful management of the farm. Such a book has just been brought forth under the title of 'Foote's Record and Account Book,' which is the simplest and most complete book of the kind ever published. In size it is 11½x17 inches, contains 170 pages of high grade ledger paper, and is in half Russia binding. The contents of this book include the following: 'Suggestions for Use of Book,' 'Gestation Table, Table of Weights per Bushel,' 'Weights and Measures, Postage Rates, Safe Principles,' 'Farm Map,' 'Land Map,' 'Plan of Buildings,' 'Plan of Orchard,' 'Memoranda,' 'Inventory of

Personal Property,' 'Annual Statements,' 'Labor and Business Memoranda,' 'Itemized Ledger Accounts,' 'Field Record,' 'Daily Records,' 'Notes and Drafts Receivable and Payable,' 'Hired Help Record,' 'Summary of Accounts.' It will be observed that much valuable information has been incorporated in this book and this, with its other features, make it, as a recent purchaser of one writes, 'an absolute necessity to successful farming.'"

The following is of interest regarding the McLaughlin Bros., importers of horses:

"Our last importation for this year and one of our largest arrived Tuesday making the total number imported by us from France more than the total number of Percheron and French coach stallions imported to this country by all others combined.

"On account of the fact that Mr. James McLaughlin spends nearly all of his time in France and speaks the French language as fluently as his native tongue the breeders of Percheron and French coach stallions give him every possible advantage. They will not sell their best ones until he has an opportunity to take his choice. Each time he goes to France he is able to buy a better lot than ever before. The last importation, which is now safely housed in our spacious home stables, surpasses in excellence.

"On account of the fact that we will save some of them to show at the Louisiana Purchase Exposition next year, the French breeders have especially favored us this time and have let us have better horses than we or anybody else have previously had the good fortune to bring to America.

McLAUGHLIN BROS.



Familiar Views on the Old Campus.

